WEST Search History

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DATE: Wednesday, December 07, 2005

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		DB=PGPB,USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR	
☐	L3	L1 same etch$4	9
☐	L2	L1 and nanostructure	3
☐	L1	(arc! or (anti adj1 reflective adj1 coating)) near3 oxidiz$5	313

END OF SEARCH HISTORY

β-Ca2P2O7 and α-Ca3(PO4)2 could induce an apatite layer on its surface, exhibiting bioactivity. The bioactive response of the micro-**arc oxidized** films to the structural factors and the apatite-induced mechanism were discussed.

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Citing References

AB The gas evapn. method was used to prep. Sn oxide ultrafine particle (UFP) films. Sn metal (99.99%) evapd. by **arc** discharge was quenched and **oxidized** in He-O2 (0.1-20 vol.%) gas mixt., and grew to **nanocrystal** size. Product was carried immediately from the evapn. chamber to a deposition chamber which was kept under 0.1 torr through a thin transfer pipe, and deposited on quartz, glass and Si substrates. A 0.3 mm diam. nozzle was attached at the end of the transfer pipe and the programmed motion of substrate drew film patterns. Samples were analyzed by XRD, TEM, SEM and photospectrometer. For O partial pressure (PO2) >80 torr, single phase SnO2 UFP films were obtained and mean particle size was 24 nm, whereas on the condition of PO2 ≤40 torr, the product was composed of Sn, SnO and SnO2. When PO2 = 80 torr, the transparency of the film whose thickness was ~2 μm was 20-80% at the visible light region and its resistivity was 7.8 Ωm.

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AB The wear life of metal components can be increased by application of ceramic coatings. A recently developed micro-**arc** discharge **oxidizing** technique allows for the formation 100-200 μm thick Al-Si-O coatings on the surface of Al alloys. A composite Al2O3-SiO2 coating is formed at room temp. as a result of a reactive process between Al in the alloy itself and O and Si supplied by an electrolyte. Al-Si-O coatings were investigated by using XPS, Vickers and **nanoindentation** hardness tests, ball-on-disk, and block-on-ring friction and wear tests. Coatings consisted of ≥2 phases, hard Al2O phase and softer aluminosilicate phase. A max. hardness of 17 GPa was found for coatings with highest content of the Al2O3 phase. The tribol. properties of Al-Si-O coatings with different compn. are discussed. The lowest friction coeff. was found for the Al0.26Si0.08O0.66 coating and was 0.15-0.25 depending on the environment. Application of this coating decreased the wear rate of Al alloy components by several orders of magnitude and permitted operation of coated friction pairs at a 1 GPa contact load.

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L1              1 S TERA (4A) OXIDIZ?
L2              2 S TERA AND OXIDIZ?
L3              0 S TUNABLE (1W) ETCH (1W) RESITANT
L4              6 S TUNABLE (1W) ETCH (1W) RESISTANT
L5              1 S L4 AND OXIDIZ?
L6         112761 S ARC OR (ANTI (1W) REFLECTIVE (1W) COATING)
L7            231 S L6 (4A) OXIDIZ?
L8              1 S L7 AND ETCH?
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L9              7 S L7 AND NANO?

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